



ABSTRACT

A method to linearly measure the flow of a gas in ducts, and a gas flow sensor using such a method are disclosed. In order to obtain a linear ratio between the differential pressure and the volumetric flow of a gas, a rectangular section elbow and a rectangular flexible plate located inside the elbow are used. When the flow goes through the duct linearization is obtained by combining the resistance of the duct and a variable-area obstruction caused by the plate. With linearization, it is possible to expand the measurement range of the gas flow in one duct. The sensor developed is used especially for the measurement of respiratory flow in medical applications.